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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 13 2011

Mr. Michael Nazzaro
Harvard Medical School
Engineering & Construction
180 Longwood Avenue
Suite 025
Boston, Massachusetts 02115

Re: PCB Cleanup and Disposal Approval under 40 CFR §§ 761.61 (a) and (c) and § 761.79(h)
Harvard College Medical School Quadrangle

Dear Mr. Nazzaro:

This is in response to the Notification [1] by the President and Fellows of Harvard College (Harvard) for a proposed PCB cleanup project at the Medical School Quadrangle on Longwood Avenue, Boston, Massachusetts (the Site). The Site contains PCB-contaminated materials that exceed the allowable PCB levels under 40 CFR§ 761.20(a), § 761.61, and § 761.62. Specifically, PCBs have been found in caulk and on adjacent *porous* (i.e., concrete) and *non-porous* (i.e. marble building stone) *surfaces*. Under this Notification, Harvard proposes the following activities:

- Remove and dispose of *PCB bulk product waste* (i.e., caulk with greater than or equal to (≥) 50 parts per million (ppm) PCBs) and *PCB remediation waste* (i.e. adjacent PCB-contaminated concrete) at a TSCA-approved or RCRA hazardous waste landfill;

- Decontaminate the marble building stone (i.e. *non-porous surface*) to less than (<) 100 µg/100 cm^2;

- Encapsulate the marble building stone with 2 coats of an epoxy or acrylic coating if the stone cannot be decontaminated to meet the *low occupancy area* PCB standard of < 100 µg/100 cm^2; and,

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1 Information was submitted on behalf of Harvard College by Woodard & Curran. The information was provided to satisfy the notification requirement under 40 CFR § 761.61(a). Information was provided dated January 10, 2011 (SIP); ; March 22, 2011 (response to comments); and April 7, 2011 (emails response to comments, owner certification, excluded PCB product determination). These submittals, together, will be referred to as the "Notification."

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- Sample the soil beneath the removed PCB-contaminated concrete. If soil samples have PCB concentrations greater than (>) 1 ppm, the soil will be removed for disposal.

Harvard has determined that caulk which has PCB concentrations at < 50 ppm, meets the criteria for an *Excluded PCB Product* under § 761.3. Under the PCB regulations, *Excluded PCB Products* are authorized for use and thus there is no requirement for removal of the caulk or for decontamination of surfaces that are in contact with the < 50 ppm caulk. Thus, caulk with < 50 ppm PCBs and concrete located adjacent to this caulk are not addressed in this Approval. However, Harvard is proposing to remove and dispose of the > 1 ppm but < 50 ppm caulk as part of the sidewalk repair work.

Harvard may proceed with its project in accordance with 40 CFR §§ 761.61 (a) and (c); § 761.62(a); § 761.79(h); its Notification; and, this Approval, subject to the conditions of Attachment 1. Please be aware that in the event the encapsulation option is implemented for *non-porous surfaces*, this Approval reserves EPA's rights to require additional cleanup and/or mitigation methods should the encapsulation not be effective in eliminating exposure to PCBs.

Questions and correspondence regarding this Approval should be directed to:

Kimberly N. Tisa, PCB Coordinator (OSRR07-2)
United States Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1527
Facsimile: (617) 918-0527

EPA shall not consider this project complete until it has received all submittals required under this Approval. Please be aware that upon EPA receipt and review of the submittals, EPA may request any additional information necessary to establish that the work has been completed in accordance with 40 CFR Part 761, the Notification, and this Approval.

Sincerely,

James T. Owens III, Director
Office of Site Remediation & Restoration

cc Jeffrey Hamel, Woodard & Curran, Inc
MassDEP, Boston
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Attachment 1

ATTACHMENT 1:

PCB CLEANUP AND DISPOSAL APPROVAL CONDITIONS
HARVARD COLLEGE MEDICAL SCHOOL QUADRANGLE
LONGWOOD AVENUE
BOSTON, MASSACHUSETTS

GENERAL CONDITIONS

1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to *PCB remediation waste* identified in the Notification and located at the Site.

2. The President and Fellows of Harvard College (Harvard) shall conduct on-site activities in accordance with the conditions of this Approval and with the Notification.

3. In the event that the activities described in the Notification differ from the conditions specified in this Approval, the conditions of this Approval shall govern.

4. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.

5. Harvard must comply with all applicable federal, state and local regulations in the storage, handling, and disposal of all PCB wastes, including PCBs, PCB Items and decontamination wastes generated under this Approval. In the event of a new spill during response actions, Harvard shall contact EPA within twenty-four (24) hours for direction on sampling and cleanup requirements.

6. Harvard is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time Harvard has or receives information indicating that Harvard or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within twenty-four (24) hours of having or receiving the information.

7. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by Harvard are authorized to conduct the activities set forth in the Notification. Harvard is responsible for ensuring that its selected transporters and disposal facilities are authorized to conduct these activities in accordance with all applicable federal, state and local statutes and regulations.

8. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release Harvard from compliance with any applicable requirements of federal, state or local law; or 3) release Harvard from liability for, or otherwise resolve, any violations of federal, state or local law.

NOTIFICATION AND CERTIFICATION CONDITIONS

9. This Approval may be revoked if the EPA does not receive written notification from Harvard of their acceptance of the conditions of this Approval within ten 10 business days of receipt.

10. Harvard shall notify EPA in writing of the scheduled date of commencement of on-site activities at least one (1) business day prior to conducting any work under this Approval.

11. Prior to initiating onsite work under this Approval, Harvard shall submit the following information for EPA review and/or approval:

    a. A certification signed by its selected contractor, stating that the contractor(s) has read and understands the Notification, and agrees to abide by the conditions specified in this Approval;

    b. A contractor work plan prepared and submitted by the selected contractor(s), detailing the procedures that will be employed for remediation of PCB-contaminated materials and for containment during removal and remediation activities. The plan should include copies of the MSDS sheets for the products that will be used for encapsulation. This work plan should also include information on waste storage, handling, and disposal for each waste stream type and for equipment decontamination; and,

    c. A certification signed by the selected analytical laboratory, stating that the laboratory has read and understands the analytical and quality assurance requirements specified in the Notification and in this Approval.

REMEDIATION AND DISPOSAL CONDITIONS

12. To the maximum extent practical, engineering controls, such as barriers, and removal techniques, such as the use of HEPA ventilated tools, shall be utilized during removal processes. In addition, to the maximum extent possible, disposable equipment and materials, including PPE, will be used to reduce the amount of decontamination necessary.

13. PCB-contaminated materials shall be decontaminated and verification sampling and analysis shall be conducted as described below:

    a. All visible residues of PCB caulk (i.e. *PCB bulk product waste*) shall be removed as described in the Notification.

    b. The cleanup standard for *PCB remediation waste* (i.e. soil and concrete) shall be less than or equal to ($\leq$) 1 part per million (ppm) PCBs. Bulk *PCB remediation waste* samples (i.e. soil) shall be collected on a bulk basis (e.g. mg/Kg) and reported on a dry-weight basis. Verification sampling shall comply with Subpart O. *Porous surface* (i.e. concrete) samples, if applicable, shall be collected according to EPA's *draft* Standard Operating Procedure For Sampling Concrete in the Field, dated 12/30/97 to a maximum depth of 0.5 inches.

    c. The cleanup standard for *non-porous surfaces* (i.e. marble building stone) shall be less than (<) 100 $\mu g/100\ cm^2$ PCBs.

        i) For the cleanup activities associated with the *non-porous surfaces* (i.e., marble building stone), the minimum verification sampling frequency for decontaminated stone shall be 1 sample per 12 linear feet (LF) or three samples, whichever is greater.

        ii) In the event that *non-porous surfaces* (i.e. marble building stone) cannot be decontaminated to the standard of < 100 $\mu g/100\ cm^2$, the encapsulation described in the Notification shall be implemented. If encapsulation is implemented, Harvard will be required to establish a long-term monitoring and maintenance implementation plan (MMIP) for the encapsulated surface (see Condition 15).

    d. Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846; and, chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction/analytical method(s) is validated according to Subpart Q.

14. PCB waste (at any concentration) generated as a result of the activities described in the Notification, excluding any decontaminated materials, shall be marked in accordance with CFR 40 CFR § 761.40; stored in a manner consistent with 40 CFR § 761.65; and, disposed of in accordance with 40 CFR § 761.61 or § 761.62, unless otherwise specified below.

    a. Decontamination wastes and residues shall be disposed of in accordance with 40 CFR § 761.79(g)(6).

b. Moveable equipment, tools, and sampling equipment shall be decontaminated in accordance with either 40 CFR § 761.79(b)(3)(i)(A), § 761.79(b)(3)(ii)(A), or § 761.79(c)(2).

c. PCB-contaminated water generated during decontamination shall be decontaminated in accordance with 40 CFR § 761.79(b)(1) or disposed of under § 761.60.

15. In the event that the marble building stone cannot be decontaminated to $< 100\ \mu g/100\ cm^2$ and encapsulation is used, Harvard shall submit for EPA's review and approval, a detailed Monitoring and Maintenance Implementation Plan (MMIP) for the encapsulated surfaces. The MMIP shall be submitted within thirty (30) days of completing the encapsulation described in the Notification and Harvard shall incorporate any changes to the MMIP as required by EPA.

a. The MMIP shall include: a description of the activities that will be conducted, including inspection criteria, frequency, and routine maintenance activities; sampling protocols, sampling frequency, and analytical criteria; and, reporting requirements, as applicable.

b. The MMIP shall include a communications component which details how the maintenance and monitoring results will be communicated to the Site users, including other on-site workers and other interested stakeholders.

c. The MMIP shall include a worker training component for maintenance workers or for any person that will be conducting work that could impact the encapsulated PCB-contaminated surfaces.

d. Harvard shall submit the results of these long-term monitoring and maintenance activities to EPA. Based on its review of the results, EPA may determine that modification to the MMIP is necessary in order to monitor and/or evaluate the long-term effectiveness of the encapsulant.

e. Activities required under the MMIP shall be conducted until such time that EPA determines, in writing, that such activities are no longer necessary.

f. A copy of the MMIP shall be attached to the deed restriction.

DEED RESTRICTION AND USE CONDITIONS

16. In the event that the marble building stone cannot be decontaminated to < 100 µg/100 cm^2 and the encapsulation option is used, the following shall be required:

a. Within thirty (30) days of completing the activities described in the Notification and authorized in the Approval, Harvard shall submit for EPA review and approval, a draft deed restriction for the Site. The deed restriction shall include: a description of the extent and levels of contamination at the Site following abatement; a description of the actions taken at the Site; a description of the use restrictions for the Site; and the long-term monitoring and maintenance requirements on the Site, which may be addressed in the monitoring and maintenance implementation plan (MMIP, see Condition 15). Within seven (7) days of receipt of EPA's approval of the draft deed restriction, Harvard shall record the deed restriction. A copy of this Approval shall be attached to the deed restriction.

b. Harvard shall notify the EPA of the sale, lease or transfer of any portion of the Site, in writing, no later than thirty (30) days prior to any such action. This notification shall include the name, address, and telephone number of the new owner(s), lessee(s) or transferee(s). In the event that Harvard sells leases or transfers any portion of the Site, Harvard shall continue to be bound by all the terms and conditions of this Approval, except as provided below. EPA may allocate some or all of this Approval's responsibilities to a new owner, lessee or transferee through the issuance of a new approval. The procedures for the issuance of a modification to this Approval ("New Owner Modification") are as follows:

i) The new owner(s), lessee or transfer entity must request, in writing, that the EPA issue a New Owner Modification to the new owner(s), lessee or transferee which transfers some or all responsibilities to comply with the terms and conditions of this Approval to that entity or entities;

ii) The EPA reviews the request, and determines whether to issue a New Owner Modification;

iii) EPA provides a draft New Owner Modification for comment by the requesting party(ies) and, following its receipt and review of any written comments, EPA shall provide the final New Owner Modification to the party(ies); and,

iv) The new owner(s), lessee or transferee provides written notification to the EPA of its acceptance of and intention to comply with the terms and conditions of the final New Owner Modification. The New Owner Modification may be withdrawn if the EPA does not receive written

notification from the new owner(s), lessee(s) or transferee(s) of its acceptance of, and intention to comply with, the terms and conditions of the final New Owner Modification within thirty (30) days of the date of the final New Owner Modification. Under such circumstances, all terms and conditions of this Approval will continue to be binding on Harvard.

c. In the event that the sale, lease or transfer of the Site will involve or result in a change in the use of the Site, EPA may revoke, suspend, and/or modify this Approval or the New Owner Modification if it finds, due to the change in use, that this risk-based cleanup and disposal action will not be protective of health or the environment. The new owner shall record any amendment to the deed restriction, resulting from any approved modification(s), within sixty (60) days of such change(s).

d. In any sale, lease or transfer of the Site, Harvard shall retain sufficient access rights to enable it to continue to meet its obligations under this Approval for maintenance and monitoring of the barriers, except as provided otherwise in a re-issued approval.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

17. Harvard shall allow any authorized representative of the Administrator of the EPA to inspect the Site and to inspect records and take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by Harvard to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.

18. Any proposed modification(s) in the plan, specifications, or information in the Notification must be submitted to EPA no less than 14 calendar days prior to the proposed implementation of the change. Such proposed modifications will be subject to the procedures of 40 CFR § 761.61(a)(3)(ii).

19. Any departure from the conditions of this Approval without prior, written authorization from the EPA may result in the revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

20. Approval for these activities may be revoked, modified or otherwise altered: if EPA finds a violation of the conditions of this Approval or of 40 CFR Part 761, including EPA's PCB Spill Cleanup Policy, or other applicable rules and regulations; if EPA finds that these activities present an unreasonable risk to public health or the environment; or if EPA finds that an encapsulant is not an effective barrier to prevent exposure to a PCB-contaminated surface. Harvard may apply for appropriate modifications in the event new rules, standards, or guidance comes into effect.

21. Any misrepresentation or omission of any material fact in the Notification or in any records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

RECORDKEEPING AND REPORTING CONDITIONS

22. Harvard shall prepare and maintain all records and documents required by 40 CFR Part 761, including but not limited to the records required under Subparts J and K. A written record of the cleanup and disposal and the analytical sampling shall be established and maintained by Harvard in one centralized location, until such time as EPA approves in writing a request for an alternative disposition of such records. All records shall be made available for inspection to authorized representatives of EPA.

23. Harvard shall submit a final report to the EPA within 60 days of completion of the activities authorized under this Approval. At a minimum, this final report shall include: a short narrative of the project activities; characterization and confirmation sampling analytical results; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCB waste disposed of and the size of the PCB cleanup area(s); copies of manifests and bills of lading; copies of certificates of disposal or similar certifications issued by the disposer; and a copy of the deed restriction.

    a. In the event that Harvard is able to achieve a PCB cleanup standard of $< 100\ \mu g/100\ cm^2$ for *non-porous surfaces* (i.e. marble building stone) the MMIP requirements specified under Condition 15 shall not apply.

    b. In the event that Harvard is able to achieve a PCB cleanup standard of $< 100\ \mu g/100\ cm^2$ for *non-porous surfaces*, Harvard shall record the notation on the deed as required under § 761.61(a)(8)(i)(A) in lieu of the deed restriction requirements specified under Condition 16.

    c. Within 60 days of completion of the cleanup activities described in the Notification and authorized by this Approval, and as required under § 761.61(a)(8)(i)(B), Harvard shall submit to EPA a certification, signed by a Harvard approving official, that it has recorded the notation on the deed as required under Condition 16.a or Condition 23.b.

    d. In the event that Harvard is able to achieve a PCB cleanup standard of $\leq 10\ \mu g/100\ cm^2$ for *non-porous surfaces* and ≤ 1 ppm for *PCB remediation waste* (i.e. soils and concrete) the deed restriction requirement specified in Condition 16.a and Condition 23.b shall not apply.

24. Required submittals shall be mailed to:

    Kimberly N. Tisa, PCB Coordinator
    United States Environmental Protection Agency
    5 Post Office Square, Suite 100 – (OSRR07-2)
    Boston, Massachusetts 02109-3912
    Telephone: (617) 918-1527
    Facsimile: (617) 918-0527

25. No record, report or communication required under this Approval shall qualify as a self-audit or voluntary disclosure under EPA audit, self-disclosure or penalty policies.

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END OF ATTACHMENT 1